

Semi Design

find you way in #VLSI with us

Digital Logic Design

1. Basics of Digital Design
 - a. Digital vs. Analog
 - b. Number representation – Digital Systems
 - i. bit, boolean, signed, unsigned
 - ii. formats and their conversions
 - iii. Compliments – 1's and 2's
 - c. Basic logic gates and families
 - d. Boolean Algebra
2. Combinational Logic/Circuit Designing
 - a. Canonical forms - SOP, POS
 - b. Minimizations Techniques - K-Map, QM method
 - c. Designing Combinational circuits – examples
 - d. BDD's
3. Sequential Logic/Circuit Designing
 - a. Definition
 - b. Clocks
 - c. synchronous circuits
 - d. asynchronous circuits
 - e. FSM's
 - f. Sequential Circuit Designing – Examples
 - g. RAM, ROM, SRAM, DRAM, PROM, EPROM
 - h. Computer Architecture – RISC, CISC
4. Digital Design Flow Modeling
 - a. VLSI Digital/Analog Design flow
 - b. Language Specification
 - c. VHDL/Verilog digital model example
5. Exercises
6. Advanced Digital Design
 - a. Synthesis
 - b. RTL to gate Level Synthesis Examples
 - c. Static Timing Analysis
 - d. setup, hold, rise, fall, slack, slew, skew, latency
 - e. gate (cell), path delays, false paths
 - f. Data Path Synthesis
 - g. Low Power Synthesis
 - h. Design for testability – DFT
7. Exercises
 - a. Mock test daily after session